

REMARKS

Claims 1-8, 12-21, 27-39, 42, 44, 46, 48, 50, 52, 54, and 56 are pending in the application. Claims 40, 41, 43, 45, 47, 49, 51, 53, 55, and 57 are withdrawn from consideration as being directed to non-elected inventions. In the final Office Action of July 28, 2006, the Examiner made the following disposition:

- A.) Rejected claims 1-4, 7-8, 12-21, 42, 44, 46, 48, 50, 52, 54, and 56 under 35 U.S.C. §103(a) as allegedly being anticipated by *Motoki et al. (US 6,667,184)*("Motoki").
- B.) Rejected claims 5-6, 12-17, and 27-39 under 35 U.S.C. §103(a) as allegedly being unpatentable over *Motoki*.
- C.) Rejected claims 1, 42, 44, 46, 50, 52, 54, and 56 provisionally under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 79, and 80 of copending Application No. 11/148,771.

Applicants respectfully traverse the rejections and address the Examiner's disposition below.

- A.) Rejection of claims 1-4, 7-8, 12-21, 42, 44, 46, 48, 50, 52, 54, and 56 under 35 U.S.C. §103(a) as allegedly being anticipated by *Motoki et al. (US 6,667,184)*("Motoki"):

Applicants respectfully traverse the rejection.

On page 2 of the *Office Action of 7/28/2006*, the Examiner cites 35 U.S.C. §103(a) but then states that claims 1-4, et al. are rejected under 35 U.S.C. §102(a). On page 3 of the same Office Action, the Examiner further alleges that it would have been obvious to one of ordinary skill in the art to choose different shapes of second regions. Therefore, it is unclear whether these claims are rejected under 35 U.S.C. §102(a) or 35 U.S.C. §103(a). Applicants assume these claims are rejected under 35 U.S.C. §103(a) and respond to the rejection below. In any event, as discussed below, the subject matter claimed in claims 1-4, 7-8, 12-21, 42, 44, 46, 48, 50, 52, 54, and 56 is neither disclosed nor suggested by *Motoki*.

Referring to Applicants' Figure 25 as an illustrative example, independent claims 1, 42, 44, 46, 48, 50, 52, 54, and 56 each claim a substrate that includes a plurality of stripe-shaped second regions B that are aligned regularly in a first region A made of a crystal. The second regions B have a second average dislocation density that is higher than a first average dislocation density of the first region A. At least one of the second regions B has a c-axis that is inverted relative to the first region.

The claimed substrate having stripe-shaped second regions beneficially allows a device/structure to be cleaved or diced so that the device/structure has linear edge lines. For example, as shown in Figure 23, when the device/structure 2 is cleaved or diced along its boundaries, the device/structure edges will have linear cleaved edge lines. This is due to the stripe-shaped second regions. To show the distinction, if the second regions instead had a circular shape (as shown in Figure 16), then the device/structure 2 would have curved edge lines when it is cleaved or diced. This is because the separate, round second regions of Figure 16 pull the cleaved or diced edge lines, causing curvature in the device/structure's edge at each circular second region. On the other hand, the stripe-shaped second regions of the claimed invention do not cause the device/structure's edge lines to be curved.

This is clearly unlike *Motoki*, which fails to disclose or suggest a plurality stripe-shaped second regions that are aligned regularly in a first region made of a crystal. As clearly shown in *Motoki* Figure 7, *Motoki* teaches a plurality of circular second regions Z that are arranged within a first region Y. Each second region Z is formed around a defect accumulating region H.

Thus, *Motoki's* second regions are circular, like the second regions in Applicants' Figure 16. As discussed above, when a device, like *Motoki's* having circular second regions, is cleaved or diced, the device will have curved edges. This is unlike a device consistent with Applicants' claimed invention, which will have straight edges because of Applicants' claimed stripe-shaped second regions.

Motoki fails to discuss stripe-shaped second regions. Instead, *Motoki* teaches only circular second regions. The Examiner argues that it would have been obvious to one of ordinary skill in the art to choose a differently shaped second region in *Motoki*. Applicants disagree. *Motoki* fails to suggest that its second regions can have any other shape but circular, let alone a stripe shape. Yet further, *Motoki* fails to address the problem of curved edges, which is overcome by Applicants' claimed invention. Nowhere does *Motoki* teach or suggest that a stripe-shaped second region is beneficial to prevent the curved edges that are caused by circular second regions when a device is cleaved or diced.

The Examiner also cites a passage from *Motoki* as support for the Examiner's argument that *Motoki* teaches stripe-shaped regions. However, that passage merely teaches that *Motoki's* accumulating regions can have a common crystal orientation with the surrounding region. It appears that the Examiner may have misinterpreted the term "common" accumulating region to mean a stripe-shaped region. However, that is an incorrect interpretation--*Motoki* clearly describes a "common" crystal orientation, not a common stripe-shaped region.

Therefore, *Motoki* fails to disclose or suggest claims 1, 42, 44, 46, 48, 50, 52, 54, and 56.

Claims 2-4, 7, 8, 18, 20, and 21 depend directly or indirectly from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

Applicants respectfully submit the rejection has been overcome and request that it be withdrawn.

B.) Rejection of claims 5-6, 12-17, and 27-39 under 35 U.S.C. §103(a) as allegedly being unpatentable over *Motoki*:

Applicants respectfully traverse the rejection.

As discussed above, independent claim 1 is allowable over *Motoki*.

Claims 5-6, 12-17, and 27-39 depend directly or indirectly from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

Applicants respectfully submit the rejection has been overcome and request that it be withdrawn.

C.) Rejection of claims 1, 42, 44, 46, 50, 52, 54, and 56 provisionally under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 79, and 80 of copending Application No. 11/148,771:

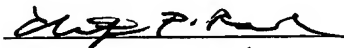
Regarding claims 46, 50, and 54, each claim subject matter relating to stripe-shaped second regions being arranged at a first interval in a first direction and at a second interval in a second direction perpendicular to the first direction, in which the second interval is smaller than the first interval. An illustrative example of this claimed subject matter can be found for example in Figure 12. This claimed subject matter is not stated in claims 1, 79, and 80 of Application No. 11/148,771. Therefore, Applicants respectfully submit that the provisional rejection is improper and should be withdrawn.

Regarding claims 1, 42, 44, 52, and 56, as the rejection is merely provisional, Applicants believe that it is premature to file a terminal disclaimer at this time.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-8, 12-18, 20, 21, 27-39, 42, 44, 46, 48, 50, 52, 54, and 56 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

 (Reg. No. 45,034)
Christopher P. Rauch
SONNENSCHN, NATH & ROSENTHAL LLP
P.O. Box #061080
Wacker Drive Station - Sears Tower
Chicago, IL 60606-1080
Telephone 312/876-2606
Customer #26263
Attorneys for Applicant(s)